Effect of Spacing, Nitrogen and Phosphorus on the Yield of Rice Variety SLR-51214

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An experiment was conducted to study the effect of various levels of nitrogen, phosphorus and spacing on the yield of rice variety 'SLR-51214' at the Main Rice Research Station, Gujarat Agricultural University, Nawagam during kharif 1984-85 to 1988-89. The soil was sandy loam in texture, low in organic matter, available nitrogen and high in available phosphorus and potash with PH 7.8. The experiment was laid out in a split-plot design with spacing in main plot treatments and nitrogen and phosphorus as sub plot treatments. In all, eighteen treatment combinations comprising three levels of spacing (15 x 15, 20 x 15 and 30 x 15 cm), three levels of nitrogen (80, 100 and 120 kg/ha) and two levels of phosphorus (0 and 40 kg/ha) with four replications under lowland conditions. The entire dose of phosphorus and one fourth of nitrogen were applied as basal. The remaining dose of nitrogen was applied in three equal splits at tillering, panicle initiation and booting stage. The results are presented in Table-1.

TABLE 1

Effect of different spacing, nitrogen and phosphorus levels on rice.

Treatment	*Grain yield kg/ha*				
	1984	*1985*	*1986*	*1988*	*Mean*
Spacing (cm)					
15 x 15	3193	3023	2657	5109	3495
20 x 15	3176	2758	2552	5032	3380
30 x 15	2872	2395	2257	4613	3034
C. D. at 5%	NS	201	NS	240	131
N Levels (kg/ha)					
80	2986	2575	2147	4789	3124
100	3065	2741	2540	4958	3326
120	3190	2860	2780	5008	3459
C. D. at 5%	NS	170	263	NS	120
$P_2 O_5$ Levels (kg/ha)					
0	3055	2628	2352	4947	3245
40	3105	2823	2625	4890	3361
C. D. at 5%	NS	139	215	NS	98
Sig. interaction	NS	S x P	S x P	NS	NS

Effect of spacing

There were significant differences in the grain yield during 1985, 1988 and mean. The highest yield of 3495 kg/ha was recorded with 15 x 15 cm but it was at par with 20 x 15 cm. These results are in conformity with those of Narang *et al.*, (1990).

Effect of nitrogen

The grain yield differences due to nitrogen levels were significant in two out of four years and in mean. Application of 100 kg N/ha gave significantly higher yield as compared to 80 kg N/ha and application of 120 kg N/ha gave significantly higher yield as compared to 100 kg N/ha in mean. Similar yield increase with increasing doses of nitrogen have also been observed by Verma *et al.* (1988).

Effect of phosphorus

The grain yield differences were significant in two out of four years and in the mean. On an average application of 40 kg P_2O_5/ha gave 3.57 per cent significantly higher yield over 0 kg P_2O_5 /ha. These results are in accordance with those reported by Prasad *et al.* (1983).

Interaction S x P was significant during 1985 and 1986.

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